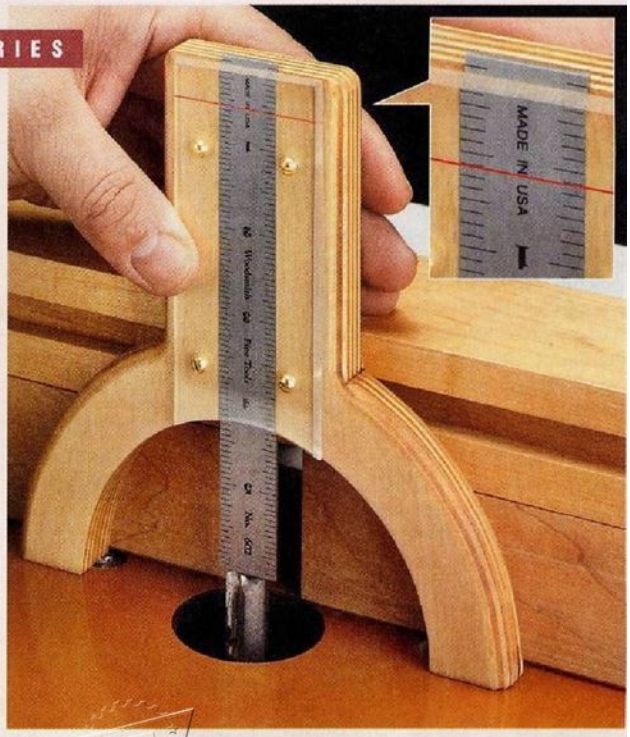
Shop-made Set-Up Gauge



Turn a piece of plywood and a small metal rule into a precision set-up tool.

Are you tired of constantly having to bend over to check the height of a bit or blade with a metal rule, or having to squint to "eyeball" a measurement? Well just grab a scrap of plywood, and you can turn a standard 6" metal rule into the precision, easy-to-read set-up gauge you see in the photo at right.

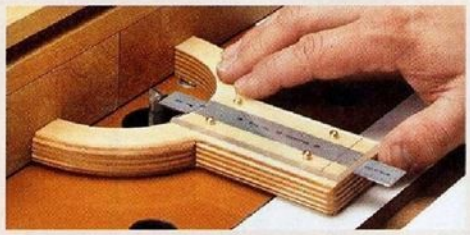
The gauge won't take long to make. (I made mine in about an hour.) But it's sure to see constant use around the shop. Positioning a router table fence (upper photo below) or drill press fence (lower photo) is fast and easy. And setting the height of a router bit or dado blade (photo at lower right) is just as easy — and extremely accurate.

Metal Rule – As I mentioned, this is a scrap wood project. But you will want to have your metal rule in hand before you start. (I used a 6" rule.) That's because the rule rests in a shallow groove cut in the gauge. This groove keeps the rule straight up and down during use.

What's important here is that the groove fits *your* metal rule. You're looking for a smooth, sliding fit. The easiest way to do this is to start with a $6^1/_2$"-square blank. (I used $^3/_4$" Baltic birch plywood.) This makes it easy to cut a centered groove for the rule, as in Figures 1 and 1a.

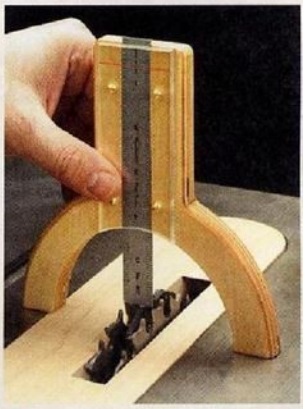
Lay Out Shape – The next step is to lay out the shape of the gauge on the plywood blank. As you can see in the photos and Figure 1, the shape is a little unusual.

The reason for this "bow-legged" stance is to span wide openings around a bit or blade. And the narrower body at the top provides a comfortable grip.

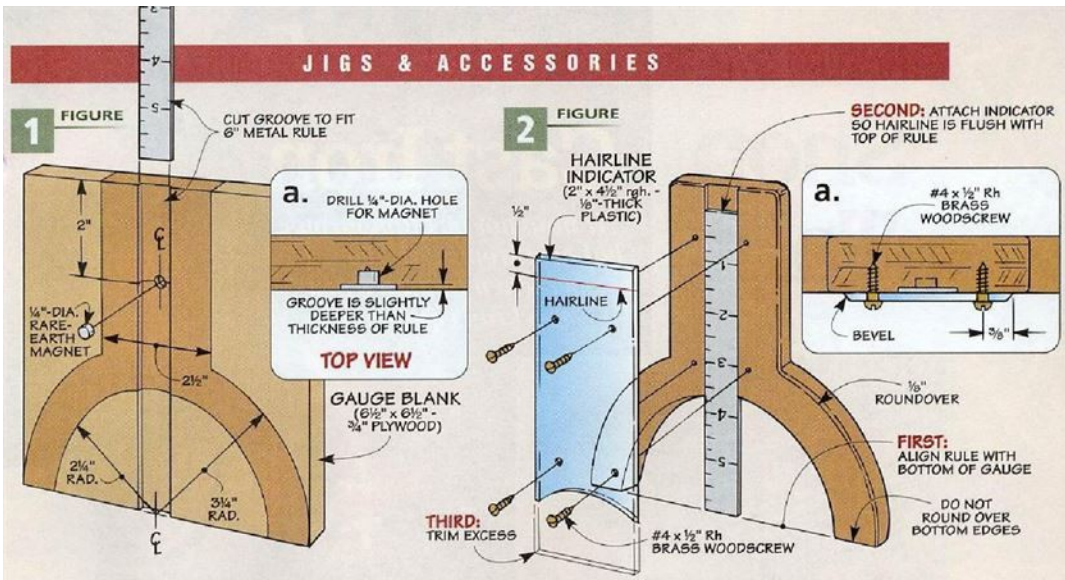


Router Table Fence. ► *Setting the position of a router table fence can be a hassle. But with the set-up gauge laying on its side, it's a simple, accurate task.*

Drill Press Fence. ► *In a similar manner, you can use the set-up gauge to position a drill press fence. This ensures that the drill bit is right where you want it.*



▲ *Dado Blade Height. The gauge also makes quick work of setting the height of a dado (or saw) blade.*



Cut to Shape – With the layout complete, a band saw makes quick work of removing the waste. Once this was completed, I routed a small roundover on a few of the outside edges, and then sanded everything smooth, like you see in Figure 2.

Magnet – Now what you need is a way to hold the rule in place. For this purpose I used a magnet. But not just any magnet. I chose a *rare-earth* magnet.

Rare-earth magnets are extremely strong for their size. As a matter of fact, I always keep a few different sizes on hand in the shop to use in jigs and projects. (For sources of rare-earth magnets, refer to the margin on page 35.)

The magnet rests in a small counterbore drilled in the center of the groove, as illustrated in Figures 1 and 1a. The counterbore is just deep enough so the magnet is flush with the bottom surface of the groove.

The magnet "locks" the rule in place when you're checking a setup, but still allows it to slide up and down when making a measurement. An added benefit is you can remove the gauge to check the reading — without having to worry about the rule shifting.

Hairline Indicator – The magnet holds the rule in place, but you still need a way to accurately make a measurement. That's where the hairline indicator comes in. It makes it easy to see the measurement on the rule, like you see in the inset photo on the opposite page.

As you can see in Figure 2, the indicator is nothing more than a line scratched into a piece of ⅛"-thick clear plastic. (I used *Plexiglas*.)

I started with an extra-long (4½") piece of plastic cut to final width (2"). Then I formed a hairline ½" down from one end of the plastic using the procedure detailed in the box below.

Install Indicator – At this point you're ready to screw the indicator to the set-up gauge. To position the indicator properly, first rest the set-up gauge on a flat surface like the top of a table saw. Then slide the rule down the groove so it's resting against the surface.

After "zeroing out" the hairline with the top of the metal rule, clamp the indicator in place. Then drill a set of pilot holes and screw the indicator to the gauge, as in Figures 2 and 2a.

All that's left to do is trim the plastic flush with the inside edge of the gauge. I did this on the band saw. Then I eased the outside edges of the plastic by sanding a small bevel, like you see in Figure 2a. With the metal rule back in place, the set-up gauge is ready to go to work.

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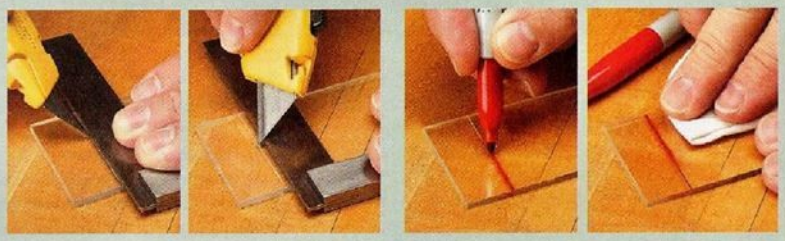
Making a Hairline Indicator



Making a hairline indicator for any project is just a simple two-step process.

Score Mark – The first step is to cut a couple angled score lines on the back side of the plastic, as in the photos above. These cuts form a *very* shallow, V-shaped channel.

Permanent Marker – To make the hairline visible, the second step is to fill in the channel with a permanent marker, as in the left photo above. When you wipe across the channel to remove the excess ink, you'll leave a small hairline visible across the indicator (right photo).